Mixture Problems

Source: <http://learning.mgccc.cc.ms.us/math/mathdocs/alg/mixtprob.pdf>

1. A gas station owner has 30 gallons of gasoline worth $1.20 per gallon and some worth $1.40 per gallon. How many gallons of the $1.40 brand must the owner mix in to produce gasoline that costs $1.28 per gallon?

2. How many pounds of coffee worth $1.44 a pound should be mixed with 20 pounds worth $1.80 a pound to produce a mixture worth $1.56 a pound?

3. An after-shave lotion contains 50% ethyl alcohol. How much water must be added to 6 fluid ounces of this lotion to reduce it to one which is 75% nonalcoholic? (Hint: 75% nonalcoholic is what percent alcoholic?)

4. How much water must be added to 20 ounces of a 15% solution of argyrol to reduce it to a solution that is 10% argyrol?

5. 2.5 kg of a nut mixture which is 50% peanuts is combined with 1kg of an 85% peanut mixture. What percent of the new mixture is peanuts?

6. How much of a 75% copper alloy should be melted into 62 kg of a 35% copper alloy to produce an alloy which is 50% copper?